

Application No. 10/827,046

Remarks

The present response accompanies a Request for Continued Examination filed with a request for an extension of time and the appropriate fees, and address issues raised in a new grounds of rejection made in the final Office Action mailed August 22, 2005.

The final Office Action rejected claims 1-2 and 4-30 under 35 U.S.C. 103(a), citing U.S. Patent No. 5,510,821 to Jones et al. in view of U.S. Patent No. 5,784,089 to Crawford. Applicants respectfully submit that the person of ordinary skill in the art would not combine the teachings of the cited references as suggested by the Office Action because such a combination would not produce a working implementation.

With respect to the invention defined in claim 4, the ink stick insertion perimeter includes at least three non-linear key elements, the first and second of which are along a portion of the ink stick insertion perimeter that is substantially perpendicular to the feed direction. The first and second non-linear key elements do not intersect one another, and the first and second non-linear key elements each have a shape substantially identical to the shape of a portion of the insertion opening.

The final Office Action identifies the elements 14 at the top and bottom of the ink stick shape shown in the Jones et al. reference as the first and second non-linear key elements, and suggests that the Crawford reference shows the ink feed system. The final Office Action asserts that it would be obvious to one having ordinary skill in the art to combine the references to produce non-linear key elements along a portion of the ink stick insertion perimeter that is substantially perpendicular to the feed direction, with the non-linear key element having a shape substantially identical to the shape of a portion of the insertion opening. Although some persons might consider such an arrangement an attractive goal, and the benefits of such an

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arrangement might be speculated upon, obtaining such an arrangement from the teaching of the references is not possible. The insertion openings 24A, 24B, 24C, 24D of the Crawford reference omit a transverse segment of the opening perimeter, opening instead into the elongate slots 25A, 25B, 25C, 25D. The reference shows the yoke 17 connected to the ink stick feed cover 30. The text refers to the constant force springs that are not shown. Those familiar with the art would be aware, in accordance with the teaching of U.S. Patent No. 5,861,903 to Crawford et al., that the constant force springs require the open slots 25A, 25B, 25C, 25D to allow the movement of the cover 30, causing the push blocks 50A, 50B, 50C, 50D to push the individual ink sticks toward the melt plates in the feed channels. Providing an insertion opening with a key shaped portion perpendicular to the feed direction for both the first and second key elements would prevent the spring from passing through the insertion openings 24A, 24B, 24C, 24D into the enlarged elongate slots 25A, 25B, 25C, 25D, and yield a non-functional arrangement for the feed mechanism. Therefore, those skilled in the art would be without a basis upon which to combine the teaching of the references to produce a functioning device. Therefore, the combination would not be obvious to those of ordinary skill in the art.

Referring next to the ink stick as claimed in independent claim 15, the ink stick includes an ink stick body adapted to be inserted in the insertion direction in the feed channel, the ink stick body having an ink stick insertion perimeter. The ink stick insertion perimeter includes two substantially parallel lateral perimeter segments, and at least one end perimeter segment. The end perimeter segment forms a leading portion of the ink stick as the ink stick moves in the feed direction along the feed channel. First, second, and third non-linear key elements are on the ink stick insertion perimeter, with the third of the non-linear key elements on the end perimeter segment. The third non-

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linear key element has a shape substantially identical to the shape of a portion of the insertion opening.

Those skilled in the art would not combine the cited references to create the claimed combination. Enclosing the end of the insertion openings 24A, 24B, 24C, 24D of the Crawford arrangement so that the shape of the leading ends of the ink sticks and the ends of the insertion openings are substantially identical would leave no opening to accommodate the spring required to operate the Crawford feed system as shown in the reference, and as further taught in U.S. Patent No. 5,861,903. The spring must pass through the insertion openings 24A, 24B, 24C, 24D into the enlarged elongate slots 25A, 25B, 25C, 25D so that the cover 30 can be closed and the push blocks urge the ink sticks toward the melt plates.

The solid ink feed system of independent claim 22, with a transverse opening perimeter segment on a portion of the key plate opening toward the melt end of the longitudinal feed channel, cannot be accommodated in the system shown in the Crawford reference so as to match the end shape of the ink stick shown in the Jones et al. reference. Enclosing the end of the openings 24A, 24B, 24C, 24D leaves no space for movement of the spring required to operate the ink feed system. Therefore, enclosing the key plate openings 24A, 24B, 24C, 24D to match the shape of the ink stick would not be obvious to a person of ordinary skill in the art.

A combination of the cited references to yield the method of the invention as defined in independent claim 29 would not be obvious to persons of ordinary skill in the art. In particular, moving the ink stick in a feed direction in the feed channel past the non-linear key element that is oriented at least partially transverse to the feed direction cannot be accommodated in a system that would result from a combination of the cited references. The feed system shown in the Crawford reference requires a spring to pass

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through each of the openings 24A, 24B, 24C, 24D and into the enlarged slots 25A, 25B, 25C, 25D. The slots 25A, 25B, 25C, 25D cannot be closed off at the ends of the openings 24A, 24B, 24C, 24D to provide non-linear key elements for the ink sticks to move past because so closing off the openings would leave no place for the springs required to operate the cover 30 and the push blocks 50.

The combination suggested in the final Office Action to enclose the insertion openings 24A, 24B, 24C, 24D of the Crawford mechanism to match the shapes 14 on the ends of the Jones et al. ink stick would not be obvious to a person of ordinary skill in the art, because such an arrangement would interfere with the core functions of the feed system shown in the Crawford reference. Therefore, applicants submit the present invention is patentably distinct from the references cited. Applicants respectfully request allowance of claims 4-6 and 15-30.

No additional fee is believed to be required for this amendment. However, the undersigned Xerox Corporation attorney (or agent) hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Corporation Deposit Account No. 24-0025. This also constitutes a request for any needed extension of time and authorization to charge all fees therefor to Xerox Corporation Deposit Account No. 24-0025.

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If the Examiner considers personal contact helpful to dispose of this case, call David J. Arthur, at Telephone Number (585) 423-9215, Rochester, New York.

Respectfully submitted,



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December 22, 2005
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